## CLAIMS AMENDMENTS

1. Pharmaceutical product for use in immunoreactions ~~characterized by~~ comprising at least part of tissues or cells of the male vegetal reproductive system, said at least part of tissues or cells comprising heterologous polypeptides as a result of the genetic modification of the plant which produces said tissues or cells.

2. Pharmaceutical product, according to claim 1, ~~characterized by~~ comprising whole/intact anthers or parts thereof.

3. Pharmaceutical product, according to ~~claims 1 and 2~~ claim 1, ~~characterized by~~ comprising whole pollen grains or parts thereof.

4. Pharmaceutical product, according to ~~claims 1 to 3~~ claim 1, ~~characterized by~~ comprising at least part of polypeptides which are at least partially purified from said tissues and/or cells.

5. Pharmaceutical product, according to ~~claims 1 to 4~~ claim 1, ~~characterized by the fact that~~ wherein the polypeptide is selected from the group that comprises at least part of eukaryotic, prokaryotic, viral or synthetic antigens, as well as therapeutic peptides, peptidic hormones, cytokines, interleucins and combinations thereof.

6. Pharmaceutical product, according to ~~any of the preceeding claims~~ claim 1, ~~characterized by the fact that~~ wherein said immunoreaction is the immunomodulation of eucaryotes.

7. Pharmaceutical product, according to claim 6, ~~characterized by the fact that~~ wherein said immunomodulation is useful as an immunotherapy.

8. Pharmaceutical product, according to claim 7, ~~characterized by the fact that~~ wherein said immunotherapy is destined for the treatment of allergies.

9. Pharmaceutical product, according to claim 7, ~~characterized by the fact that~~ wherein the said immunotherapy is destined for the treatment of autoimmune diseases.

10. Pharmaceutical product, according claim 7, ~~characterized by the fact that~~ wherein said immunotherapy is destined for the treatment of cancer.

11. Pharmaceutical product, according to claim 6, ~~characterized by the fact that~~ wherein said immunomodulation is destined for the vaccination of vertebrates.

12. Pharmaceutical product, according to ~~claims 6 to 11~~ claim 6, ~~characterized by the fact that~~ wherein said immunomodulation results from the parenteral administration to vertebrates.

13. Pharmaceutical product, according to ~~claims 6 to 11~~ claim 6, ~~characterized by the fact that~~ wherein said immunomodulation results from the administration into mucous surfaces of vertebrates.

14. Pharmaceutical product, according to claim 13, ~~characterized by the fact that~~ wherein said mucous surface is the nasal surface.

15. Pharmaceutical product, according to claim 13, ~~characterized by the fact that~~ wherein said mucous surface is the pulmonary surface.

16. Pharmaceutical product, according to claim 13, ~~characterized by the fact that~~ wherein said mucous surface is the oral or sublingual mucous surface.

17. Pharmaceutical product, according to ~~claims 1 to 5~~ claim 1, ~~characterized by the fact that~~ wherein said immunoreactions are *in vitro* immunoreactions.

18. Pharmaceutical product, according to claim 17, ~~characterized by the fact that~~ wherein said immunoreactions comprise cells which interact with said pharmaceutical product.

19. Pharmaceutical product, according to claim 17, ~~characterized by the fact that~~ wherein said immunoreactions comprise molecules which interact with said pharmaceutical product.

20. Pharmaceutical product, according to claim 19, ~~characterized by the fact that~~ wherein said molecules are antibodies or parts thereof.

21. Pharmaceutical product, according to claim 19, ~~characterized by the fact that~~ wherein said molecules are antigens or parts thereof.

22. Production process of a pharmaceutical product for use in immunoreactions, ~~characterized for~~ comprising the step of cultivation of a genetically modified plant capable of originating tissues or cells of the male vegetal reproductive system comprising heterologous polypeptides.

23. Process, according to claim 22, ~~characterized by the fact that~~ wherein said plant is modified with gene sequences comprising at least part of a promoter region functionally linked to a coding sequence of at least part of a heterologous polypeptide, so that said heterologous polypeptide is comprised in tissues or cells of the male vegetal reproductive system.

24. Process, according to claim 23, ~~characterized by the fact that~~ wherein said promoter region comprises any nucleotide sequence capable of directing the expression of said heterologous polypeptide in anthers or in any subcellular localization of anthers.

25. Process, according to claim 24, ~~characterized by the fact that~~ wherein said promoter region comprises any nucleotide sequence capable of directing the expression of said heterologous polypeptide in pollen grains cells.

26. Process, according to claim 23, ~~characterized by the fact that~~ wherein said promoter region comprises any nucleotide sequence capable of directing the expression of said heterologous polypeptide in such a way as said heterologous polypeptide is present in mature pollen grains.

27. Process, according to claim 26, ~~characterized by the fact that~~ wherein:

[[-]] said promoter region comprises any nucleotide sequence capable of directing the gene expression in the anther's tapetum;

[[-]] said sequence is functionally linked to the coding sequence of at least part of an oleosin-type protein; and

[[-]] said sequence coding at least part of an oleosin-type protein is translationally fused to a sequence coding at least part of one or more polypeptides that are useful in immunoreactions.

28. Process, according to claim 27, ~~characterized by the fact that~~ wherein said promoter region comprises at least part of the sequence SEQ. 2.

29. Process, according to claim 27, ~~characterized by the fact that~~ wherein said sequence coding at least part of an oleosin-type protein comprises at least part of the sequence SEQ. 1.

30. Process, according to ~~claims 22 to 29~~ claim 22, ~~characterized by the fact that~~ wherein said heterologous polypeptide is selected from the group ~~which~~ that comprises at least part of peptides derived from eukaryotic organisms such as mammals including humans, plants, parasites, fungi or derived from procaryotic organisms such as bacteria or even viruses, ~~as well as~~ and combinations thereof, regardless of being natural or synthetic peptides.